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A1

1. (Amended) A precursor source mixture comprising at least one precursor compound which is dissolved, emulsified or suspended in an inert liquid, said at least one precursor compound having the formula:



where M is an element selected from the group consisting of Li, Na, K, Rb, Cs, Fr, Be, Mg, Ti, Zr, Hf, Sc, Y, La, V, Nb, Ta, Cr, Mo, W, Mn, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg, B, Al, Ga, In, Tl, Si, Ge, Sn, Pb, As, P, Sb and Bi; R^1 and R^2 are the same or different ligands selected from the group consisting of hydride, carbonyl, amido, imido, hydrazido, phosphido, nitrosyl, nitril, nitrate, nitrile, halide, azide, siloxy, silyl, and halogenated, sulfonated or silylated derivatives thereof; A is a coordinatively bound or associated ligand selected from the group consisting of phosphines, phosphites, amines, arsines, stibenes, ethers, sulfides, nitriles, isonitriles, hydrazine, pyridines, nitrogen heterocycles, macrocycles, schiff bases, alcohols, phosphine oxides, alkylidenes, nitrites, and water; $x > 1$; $x+y$ = the valence of element M; and z is > 0 .

A2

3. (Amended) The precursor source mixture of Claim 1 wherein M is Li, Na, K, Rb, Cs, Fr, Be, Mg, Ti, Zr, Hf, Sc, Y, La, V, Nb, Ta, Cr, Mo, W, Mn, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg, B, Al, Ga, In, Tl, Si, Ge, Sn, Pb, As, P, Sb or Bi; R^1 is a hydride; R^2 is a hydride, carbonyl, amido, imido, hydrazido, phosphido, nitrosyl, nitril, nitrate, nitrile, halide, azide, siloxy, silyl, or halogenated, sulfonated or silylated derivatives thereof; and A is a phosphine, phosphite, amine, arsine, stibene, ether, sulfide, nitrile, isonitrile, hydrazine, pyridine, nitrogen heterocycle, macrocycle, schiff base, alcohol, phosphine oxide, alkylidene, nitrite or water.

A3

13. (Amended) The precursor source mixture of Claim 1 wherein M is Pt; R¹ and R² are hydride, carbonyl, amido, imido, hydrazido, phosphido, nitrosyl, nitryl, nitrate, nitrile, halide, azide, siloxy, silyl, or halogenated or sulfonated derivatives thereof; and A is a phosphine, phosphite, amine, arsine, stibene, ether, sulfide, nitrile, isonitrile, hydrazine, pyridine, nitrogen heterocycle, macrocycle, schiff base, alcohols, phosphine oxides, alkylidene, nitrites or water, with the proviso that the compound is not (cyclopentadienyl)Pt(alkyl)₃.

A4 C1

18. (Amended) The precursor source mixture of Claim 16 wherein the additive is selected from the group consisting of methanol, ethanol, isopropanol, neopentanol, trimethylamine, dimethylethylamine, diethylmethylamine, triethylamine, dimethylamine, diethylamine, bistrimethylsilylamine, ammonia, ethylenediamine, propylenediamine, trimethylethylethylenediamine, triphenylphosphine, triethylphosphine, trimethylphosphine, allyl, cyclopentadiene, benzene, ethylbenzene, toluene, cyclohexadiene, cyclooctadiene, cycloheptatriene, cyclooctatetraene, mesitylene, tetrahydrofuran, dimethylformamide, dimethylsulfoxide, butyl acetate, acetic acid, ethylhexanoic acid, methane, ethane, pyridine, and PF₃.

A5 C1

20. (Amended) The precursor source mixture of Claim 19 wherein the additive is selected from the group consisting of methanol, ethanol, isopropanol, neopentanol, trimethylamine, dimethylethylamine, diethylmethylamine, triethylamine, dimethylamine, diethylamine, bistrimethylsilylamine, ammonia, ethylenediamine, propylenediamine, trimethylethylethylenediamine, triphenylphosphine, triethylphosphine, trimethylphosphine, allyl, cyclopentadiene, benzene, ethylbenzene, toluene, cyclohexadiene, cyclooctadiene, cycloheptatriene, cyclooctatetraene, mesitylene, tetrahydrofuran, dimethylformamide,